UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

FEB 18 1988

Dr. James R. Campbell, Ph.D.
Program Manager, Previously Owned Properties
Keystone Environmental Services, Inc.
436 Seventh Avenue, Suite 1940
Pittsburgh, PA 15219

Re: Draft Remedial Investigation Report
for the South Cavalcade Site

Dear Dr. Campbell:

EPA Region 6 has reviewed the draft Remedial Investigation (RI) report for the South Cavalcade Street site. We recognize that considerable effort was spent in conducting the field work and writing the report. Overall, the report includes sufficient information to portray the site characteristics and as such is a commendable first draft.

We do, as usual, have some comments regarding the report. Most of the report will only require minor revisions to respond to our comments. For your convenience, we have labeled these comments as editorial comments. The editorial comments need no further discussion or explanation; we expect that you will be able to revise the report to respond to these without any difficulty.

Conversely, there are several sections within the report which were either unclear or raised some technical questions. These comments will require further discussion before we can reach an complete understanding on these points. We will discuss these at the February 19, 1988, meeting.

Should you have any questions about these comments, please contact Jim Pendergast at (214) 655-6735.

Sincerely yours,

Larry D. Wright, Chief
Superfund Enforcement Section

Enclosure

cc: D. Sorrels, TWC

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EDITORIAL COMMENTS ON VOLUME 1 OF THE DRAFT RI REPORT

No	Page	Par	Line	Comment
1	vi	2	---	Add discussion about general ground water flow direction.
2	xiii	-------		Replace the column headings for "Maximum Detected Concentrations" with "Maximum Sample".
3	xvi	2	4	Replace "two" with "one".
4	1-1	2	---	Add a paragraph to discuss the areas surrounding the site.
5	1-3	Tab 1-1		The date of Meridian ownership does not agree with the date on Figure 1-2. Make the appropriate correction.
6	1-14	2	1	Note that this work is also called the McClelland Study.
7	1-14	3	3	Reword "PRP criteria adopted by EPA" to better express what you are meaning.
8	1-14	Bullets		What is "Level A"? Either define it or delete reference to it.
9	1-15	4	1	Add the Work Plan to the Appendices if you are referring to it.
	3-11	2	--	
10	1-18	1	--	The numbers do not total: 21+9 does not equal 29+2.
11	1-19	1	2	Delete "general" and "generally".
	3-1	2	2	" " " "
	3-1	3	1	" " " "
	3-2	2	1	" " " "
	3-2	4	1	" " " "
	3-16	4	2	" " " "
	3-21	3	3	" " " "
	3-21	3	16	" " " "
	3-25	2	3	" " " "
	3-25	4	7	" " " "
	3-27	2	7	" " " "
	3-27	3	2	" " " "
	3-31	1	3	" " " "
	3-31	3	2	" " " "
	3-31	4	1	" " " "
	3-32	1	2	" " " "
	3-32	1	4	" " " "
	3-32	3	2	" " " "
	3-34	2	1	" " " "
	3-34	4	2	" " " "
	4-25	4	3	" " " "
	4-34	2	1	" " " "
	5-8	2	1	" " " "
	5-8	2	10	" " " "
	5-9	3	9	" " " "
	5-22	4	2	" " " "
	5-25	4	2	" " " "
	8-1	1	6	" " " "

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EDITORIAL COMMENTS ON VOLUME 1 continued

No	Page	Par	Line	Comment
12	2-4	5	5	Identify who reported the subsidence.
13	2-10	5	1	Replace "1986" with "1987".
14	2-13	3	---	Identify the median income and age groups. This information is available from the census and also from the North Cavalcade RI report.
15	3-7	2	4	Define "aerial photography anomaly areas".
16	3-16	4	9	Insert "necessarily" after "are not".
17	3-17	2	7	Replace "to" with "beyond".
18	3-20	3	3	Replace "two" with "the two upper".
19	3-21	3	4	Add the Field and Sampling Plan to the Appendices if you are referring to it.
20	3-25	4	5	Replace the comma with a semicolon.
21	3-33	Tab 3-3		Reword the title to indicate that these are the HSL organics which were sampled during the field work.
22	3-40	1	---	Describe the use of data under each validation class. For example, the qualified data can only be used to indicate the presence of contaminants, and not to quantify the magnitude.
23	4-11	Fig 4-11		Add boring A26-SB03 to the plot.
24	4-44	1	3	Identify which sample is from the deep aquifer.
25	5-7	last		This is awkward. This is already in Section 5.
26	5-10	1	2	Replace "3-10" with "3-3".
27	5-10	3	3	Insert "Round 1 and Round 2" after "of the".
28	5-11 5-14 5-18 5-23	Tab 5-3 Tab 5-4 Tab 5-5 Tab 5-8		Split these tables to separate the water and sediment data. This will allow the tables to more closely follow the text. At present, it is awkward to keep flipping pages to understand the points made in the text.
29	5-17	1	4	Add a statement about bis(2-ethylhexyl)phthalate to show that it is also found in the blank, and is a likely sampling induced contaminant.
30	5-21	2	12	Replace "disclosed" with "observed".
31	6-1	2	2	Insert "the" before "character".

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EDITORIAL COMMENTS ON VOLUME 1 continued

No	Page	Par	Line	Comment
32	6-1	3	4	Add a sentence to identify the number of valid, qualitative, and invalid samples.
33	6-3	4	3	Replace "was" with "were".
34	6-3	4	5	Identify the sample numbers within this sentence.
35	6-4	1	6	Replace "29 mg/kg" with "below the method detection level". Otherwise, the next sentence becomes contradictory.
36	6-5	Tab 6-1		Redo this table using units of mg/kg. This will better support the discussion on page 6-4.
37	6-9	Fig 6-1		The shading of the unpaved areas distracts from the surface and surficial soil staining areas. Remove the unpaved area shading unless it is essential for your discussion.
38	7-4	2	4&6	Are the totals for ground water samples correct? You list 62 total samples with 22 total QA/QC samples. This gives 40 total field samples. On page 7-3 you list 60 samples.
39	7-13	3	5	Add a sentence to state that these compounds are not likely contaminants at the creosote site.
40	7-16	1	1	We prefer that you use the number of locations where contamination was detected rather than the number of samples. One objective of the RI report is to identify the extent of contamination; the locations are a better indicator of extent than are the samples.
	7-16	3	4	"
	7-23	2	3	"
	7-24	1	9	"
	7-30	2	3	"
	7-31	2	2	"
41	7-16	1	4	Begin the sentence by stating "In the other X borings,".
42	7-16	3	6	Replace "no" with "no detected (10 ug/l)".
	7-24	1	11	" " " " " " "
	7-33	3	6	" " " " " " "
43	7-16	3	7	Begin the sentence by stating "In the other 12 wells,".
44	7-17	3	3	Replace "fairly well distributed" with "found".
	7-25	1	3	" " " " " "
45	7-18	Fig 7-1		Add the CDM well results.
	7-22	Fig 7-2		" " " " "
46	7-19	2	---	Add a figure to show the volatile compounds.
47	7-19	2	10	Insert the maximum CDM concentrations.
	7-21	1	9	" " " " "

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EDITORIAL COMMENTS ON VOLUME 1 continued

No	Page	Par	Line	Comment
48	7-19 7-27	3 2	1 1	The first sentence either belongs in the above paragraph or else should be a separate paragraph.
49	7-25	1	16	Insert "which could account for the variation" after "location".
50	7-26	1	5	The second and third sentences in this paragraph say the same thing abount each round. Why not delete "Round 1" from the second sentence, and delete the third?
51	7-28	2	4	Delete "at Monitoring Well SCK-MW11 and".
52	7-28	2	9	The review would be more easily conducted if the results were directly compared in a table.
53	7-30	3	4	Replace "100" with "10".
54	7-31	3	--	Compare the metal concentrations to the background for Unit 3. Although not an exact comparison, we believe the Unit 3 background sample can also serve to indicate the background for Unit 4.
55	7-34	1	2	Insert "in CAV-OW06" after "compounds".
56	7-34 7-34	3 4	-- --	Add the maximum values of the samples. " " " " " " "
57	7-35	2	--	In line 4 , reference a map to identify these areas, and in line 5, append "and had concentrations exceeding 1 mg/kg".
58	7-35	3	--	Add "There were xx of these borings."
59	7-36	3	--	This paragraph is unclear. We are not sure which area you are discussing. Reword to make it clearer.
60	7-40 7-41	Bullets Fig 7-6		Identify the levels of surrogate and laboratory responses which you used to determine the presence of contamination.
61	7-34 7-40 xiv	------- ------- -------		Add a map and discussion for volatiles and metals. "
62	7-443 7-44	1 2	2 4	Identify the method detection level. " " " " "
63	7-45	3	--	The aquifer thicknesses are missing.
64	7-46	1	--	The ground water volumes are missing.

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EDITORIAL COMMENTS ON VOLUME 1 continued

No	Page	Par	Line	Comment
65	7A-1	-------		The units should be the same as in the text (mg/kg).
	7A-4	-------		" " " " " " " " " " "
	7A-5	-------		" " " " " " " " " " "
	7A-6	-------		" " " " " " " " " " "
	7A-9	-------		" " " " " " " " " " "
	7A-10	-------		" " " " " " " " " " "
66	Appendix 7B			The validation status is missing.
67	8-3	Tab 8-1		Add the time of day to the column headings.
68	8-13	1	5	Replace "27" with "17".
69	8-13	1	6	Add "which have MEG's" after "investigated".
70	8-18	4	1	Replace "27" with "17".
71	8-18	4	1	Add "which have MEG's" after "analyzed".
72	8-18	4	2	Replace "limits" with "MEG's".
73	8-19	3	1	Define trace quantities as "less than 0.01 ug/M^3".
74	9-5	Tab 9-1		The table is missing the geometric means, and is not
	9-6	Tab 9-2		consistent when reporting zero occurrences.
	9-9	Tab 9-3		" " " " "
	9-10	Tab 9-4		" " " " "
	9-12	Tab 9-5		" " " " "
	9-13	Tab 9-6		" " " " "
75	9-15	Soils		The pathways for the trespassers also apply to the on-site workers. Fix the table to show this.

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EDITORIAL COMMENTS ON VOLUME 2 OF THE DRAFT RI REPORT

No	Page	Par	Line	Comment
1	Appendix G			Add the 9/17/86 letter from James Campbell which requests the revised sampling program.

EDITORIAL COMMENTS ON VOLUME 3 OF THE DRAFT RI REPORT

No	Page	Par	Line	Comment
1	A-6	Figure		The well log in Appendix F shows a clayey sand for SCK-P05 at 51 feet instead of a silty sand. The nearby boring A26-SB03 also shows a clayey sand at 51 feet.
2	C-1	1	3	Delete "general" and "generally".
	S-1	1	5	" " " "
	S-1	1	7	" " " "
3	C-2	Note 2		What is this describing?
4	C-3	2	---	Identify in this paragraph a high value from the data. This is needed for comparison to the low values discussed.
5	C-4	Table		The "zero" for zinc should be "4".
6	C-6	3	13	Insert "total aromatic hydrocarbons" after "samples".
7	C-11	1	1	The first part of the sentence is missing.
8	C-11	1	---	Show the data regarding the replicates.
	C-11	3	---	" " " " " "
9	E-9	Table		The data are missing from the table.
10	Appendix I			The shallow plot for 8/28/85 is either mis-dated or out of order.
11	J-13	Table		The sieve curve for SCK-P01 on page A-5 does not intersect the 10% line. Therefore, the Hazen approximation should be $<1.0 \times 10^{-6}$.
12	J-14	2	7	Replace "less" with "more".
13	Appendix L			Add the well records for wells 407, 408, and 438.
14	Appendix R			Add the validation status for each sample.

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TECHNICAL COMMENTS ON VOLUME 1 OF THE DRAFT RI REPORT

No	Page	Par	Line	Comment
1	1-14	-------		Add a subsection which identifies the contaminants related to the historical operations and which were expected to be found onsite. You also need to briefly discuss the chemical and physical properties of these contaminants. The toxicological properties can be discussed in Section 9.
2	1-18	-------		Add a subsection which discusses the extent and nature of the contaminant problem. This is a required item under the 1985 RI guidance.
3	2-10	3	---	Do the cited hazardous waste releases affect the South Cavalcade site? Each incident must be identified in a table as to the location. I am particularly interested if there is a release of any contaminant for which you tested.
4	4-9	Fig 4-4c		The figure shows that MW16 is screened in a sandy clay. The log for the well shows a clay. Therefore, are the data from this well meaningful? Note that this well alone causes the interpretation of a northerly flow on the southern side of the property (Figure 4-17, page 4-42).
5	4-11	Fig 4-4e		The figure shows that P05 is screened in a sandy clay. However, the well log shows a silty sand and a nearby boring shows a clayey sand. Therefore, do you believe the data from this well is meaningful? Note that P05 had the lowest hydraulic conductivity (two orders of magnitude) amongst all the borings tested in this aquifer (Table 4-7, page 4-43).
6	4-32	2	--	How does the shallow aquitard affect the recharge of the shallow aquifer?
7	4-34 4-39	4 3	5 6	Why did you only use the elevation data from November 30, 1987, in portraying the ground water flow? Is this date typical of the other dates, or of the average?
8	4-36 4-40	2 3	--- ---	Does this plotting program incorporate hydrogeolical principles? If not, then we cannot accept the plot as valid.
9	4-39	3	8	How should the ground water theoretically vary due to the interspersed sand and clay lenses? Do the water elevation observations conform with your expectations from the borings?

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TECHNICAL COMMENTS ON VOLUME 1 continued

No	Page	Par	Line	Comment
10	4-40	1	---	We am not convinced that the ground water flow is correctly portrayed in Figure 4-17 on page 4-42. First, the contour plot reflects only curve fitting and not hydrogeological interpretations. Second, the plot is heavily reliant upon well MW23 which may not be screened in the same sand lens as are the other wells directly to the west. Third, the plot is heavily reliant upon well MW16 which is screened in a clay layer.
11	4-43	Tab 4-7		We am not convinced that the hydraulic conductivity for P05 represents the upper intermediate aquifer. Nearby borings show clayey sand and sandy clay. The clays may account for the conductivity which is two orders of magnitude lower than the average of the other three wells.
12	4-47	Fig 4-19		Is DW02 too far to the west to have a chance of capturing any potential contamination from the source areas? This figure suggestrs that we need a deep well to the east.
13	5-21 vii	1 4	1 1	We disagree. All you have shown is that the water concentrations are no more than slightly above the drinking water criteria. However, you have not addressed toxicity to aquatic organisms. This could be a problem as shown below. It is premature to make any statement about significance of contaminant levels in the RI, and that this will be addressed in the FS.

Pollutant	Maximum Sample	EPA Chronic Criterion	Is It A Concern?
Arsenic	56	48	maybe
Copper	17	12	maybe
Lead	31	3.2	yes
Nickel	36	160	no
Silver	11	0.12	yes
Zinc	140	110	maybe

units in ug/l

14	5-27 ix	3 2	4 1	We disagree with the inference about PAH concentrations in the sediments. The concentration of the background sample, SCK-SD11, is 7.7 mg/kg whereas the concentration of the highest sample, SCK-SD04, is 236 mg/kg. Therefore, the presence of PAHs in the background is insignificant in relation to the overall contamination.
15	5-27 ix	4 2	2 4	We disagree that metal concentrations reflect background conditions. Cadmium in SCK-SD03 and copper in SCK-SD04 are over double the background levels in SCK-SD05.
16	6-2 6-3	3 3	3 3	You are stating that the surrogate testing did not show contamination in areas with observable soil staining. Does this detract from the validity of the surrogate methods?

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TECHNICAL COMMENTS ON VOLUME 1 continued

No	Page	Par	Line	Comment
17	6-3 7-1 7-15 7-23 7-30	4 2 2 1 1	3 10 14 14 8	This sentence is unclear; it can be interpreted to mean that invalid data were used in the evaluation. Invalid data should not be used. We believe you mean to say that some qualitative data were used along with the valid data in the evaluation.
18	6-4 x 7-16 7-24 7-30	2 2 2 1 4	Table --- --- --- ---	Why is lead not listed? We understand that lead may not a typical contaminant at a creosote site, but the site data shows that lead was found in concentrations exceeding the background. Therefore, include lead in these tables. "
19	6-10	4	1	What do you mean by "significant"? Rephrase this paragraph to discuss the factual findings and not a judgement on findings. Significance will be discussed in the Feasibility Study report after the public health risk has been evaluated.
20	7-3	2		What is the validation status for the ground water samples?
21	7-10	3	6	We do not agree that all four locations show "fairly consistent" results. Well MW-16 has chemical parameters which are much greater than the parameters for the other three wells.
22	7-35	2	--	Why were borings A01-SB03, A01-SB09, and A03-SB05 not included in this analysis?
23	7-36	1	5	What about A10-SB01? This boring has the highest concentration in the southeastern area.
24	7-45	------		Why not identify the volume of soils associated with the contaminated ground water?
25	8-12	2	13	The last part of the paragraph is confusing. One sentence states that it is impossible to evaluate collection efficiency whereas the next sentence says it is satisfactory.
26	8-2	-------		Where is the discussion on data valadation for air samples.
27	9-7	1		What about surficial soils? Are these also of interest? What about future development which may result in breaching the paved areas? These issues must also be addressed
28	9-11 xvii	2 4		Lead was found at concentrations exceeding the background. Why isn't it considered a PCOC?
29	9-15 9-17 9-26	Sediment 2 Sediment	 2 	Access is not restricted for all ditches. Therefore, the term "trespassers" is not completly accurate. We prefer the term "non-workers".

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TECHNICAL COMMENTS ON VOLUME 1 continued

No	Page	Par	Line	Comment
30	9-24 9-27 xxi	1	6	Some of the metals in the surface water exceed EPA chronic aquatic water criteria. We disagree with this statement in the report.
31	9-16 9-20 9-27 xx	Grdwater 2 Grdwater Grdwater		Another future pathway is migration of the subsurface wastes to a well which could provide a pathway for migration to a lower aquifer. Add this pathway.

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TECHNICAL COMMENTS ON VOLUME 3 OF THE DRAFT RI REPORT

No	Page	Par	Line	Comment
1	A-1	Table		Explain why sample A14-SB03-19 has a hydraulic conductivity which is two orders of magnitude greater than the others from this aquitard.
2	C-1	1	1	What measure was evaluated? Were you evaluating the presence or magnitude of contamination? This paragraph implies magnitude; the statement discusses presence.
3	C-1	1	11	How was agreement on negative correlations used?
4	C-3	3	---	We do not believe you have sufficient data to make any statistically significant statement about x-ray fluorescence. However, we agree that your data and lack of data shows that x-ray fluorescence is not a proven method for this site.
5	Appendix I			We have problems with the manner in which these plots were drawn. The computer only fits curves to data. It does not provide hydrogeological interpretations.
6	J-2	Table		We have problems with SCK-P05. Part of the boring log from Appendix F shows a clayey sand. Nearby borings show a clayey sand (A26-SB03) and a sandy clay (A26-SB08).
7	S-5	--------		Add a discussion on precision. This involves calculating a relative standard deviation (%RSD) and comparing it on a contaminant specific basis to the %RSD from the EPA CLP program. We have mailed you an EPA report which presents the CLP results and describes the methodology for calculating the %RSD.
8	Appendix S			The blank sample SW08-01 has a high lead content, but all of the inorganic data in Appendix P were portrayed as valid. Doesn't the high lead blank make the lead results only qualitative?

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